# WT11i EVALUATION KIT

## DATA SHEET

Tuesday, 01 October 2013

Version 1.5

**Copyright © 2000-2013 Bluegiga Technologies**

All rights reserved.

Bluegiga Technologies assumes no responsibility for any errors which may appear in this manual. Furthermore, Bluegiga Technologies reserves the right to alter the hardware, software, and/or specifications detailed here at any time without notice and does not make any commitment to update the information contained here. Bluegiga's products are not authorized for use as critical components in life support devices or systems.

The WRAP, Bluegiga Access Server, Access Point and iWRAP are registered trademarks of Bluegiga Technologies.

The *Bluetooth* trademark is owned by the Bluetooth SIG Inc., USA and is licensed to Bluegiga Technologies. All other trademarks listed herein are owned by their respective owners.

## VERSION HISTORY

| Version | Comment |
|---|---|
| 1.4 | Table 2 corrected |
| 1.5 | Minor changes |

## TABLE OF CONTENTS


1 Introduction ..... 5
2 Physical outlook ..... 6
3 Schematics ..... 7
4 Assembly ..... 7
5 Gerber ..... 7
6 SPI (J1) interface ..... 8
7 GPIO (J2) interface ..... 9
8 PIO SELECT (J3) ..... 10
9 RESET (J4) ..... 10
10 DSR (J5) ..... 10
11 Speaker JACK (J6) ..... 11
12 Microphone JACK (J7) ..... 11
13 SIG Select (J8) ..... 11
14 RS-232 (J9) DTE interface ..... 12
15 USB (J10) interface ..... 13
16 Power supply (J11) ..... 13
17 Power supply (J12) ..... 13
18 Contact Information ..... 14

# 1 Introduction

**WT11i Development Kit Contents:**

- WT11i development board containing:
  - WT11i *Bluetooth* Module
  - RS232 and USB interfaces
  - PCM codec and 3.5mm audio jacks
  - 16 pin IO header
  - Unregulated power supply input (5-9V)
  - Debug connector for firmware updates
  - 3.5mm audio jacks for speaker and microphone connection
- RS232 cable
- Debug cable for firmware updates
- Documentation
- Preinstalled with latest iWRAP *Bluetooth* software

# 2 Physical outlook

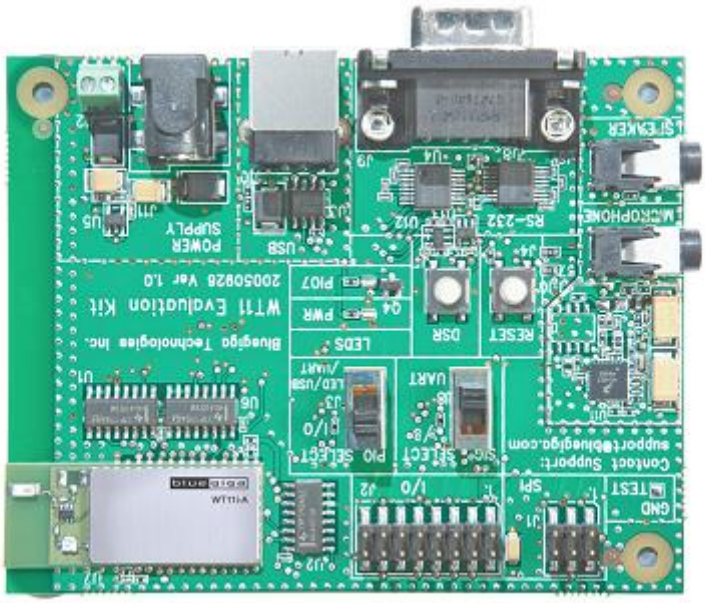


**Figure 1: WT11i Evaluation Board**

# 3 Schematics

Schematics of WT11 Evaluation Kit can be found from the CD delivered with the package or alternatively downloaded from http://www.bluegiga.com

# 4 Assembly

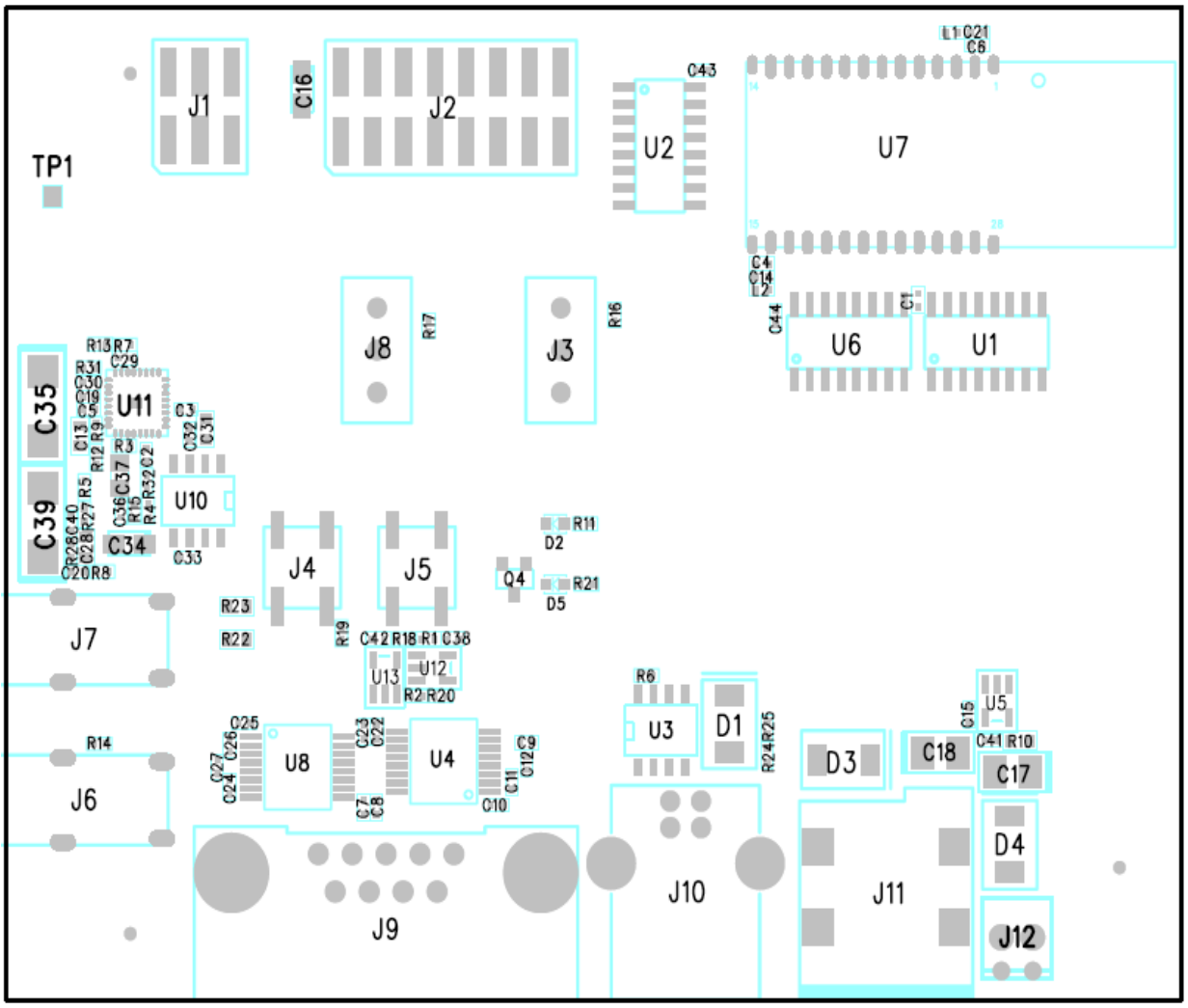


**Figure 2:** WT11 Evaluation Kit assembly

# 5 Gerber

Gerber of WT11 Evaluation Kit can be downloaded from www.bluegiga.com.

# 6 SPI (J1) interface

SPI interface pin configuration is show in Table 2. The physical interface is 2X3 pin header (*AMP146134-2*).

| PIN Name: | No.: | I/O: | Description: |
|---|---|---|---|
| MISO | 1 | O | MISO |
| 3.3 V | 2 | POWER | 3.3 V power supply input |
| CLK | 3 | I | CLK |
| MOSI | 4 | I | MOSI |
| CSB | 5 | I | CSB |
| GND | 6 | GND | GND |

**Table 1: SPI Interface PIN description**

# 7 GPIO (J2) interface

General purpose interface pin configuration is show in Table 2. The physical interface is 2X8 pin header (*AMP146134-7*).

| PIN Name: | No.: | I/O: | Description: |
|---|---|---|---|
| RESET | 1 | I | Reset |
| 3.3 V | 2 | POWER | Regulated power supply output (3.3 V) |
| PIO2 | 3 | I/O | Programmable IO number 2 |
| PIO3 | 4 | I/O | Programmable IO number 3 |
| PIO4 | 5 | I/O | Programmable IO number 4 |
| PIO5 | 6 | I/O | Programmable IO number 5 |
| PIO6 | 7 | I/O | Programmable IO number 6 |
| PIO7 | 8 | I/O | Programmable IO number 7 |
| RTS | 9 | O | UART RTS |
| CTS | 10 | I | UART CTS |
| GND | 11 | GND | GND |
| GND | 12 | GND | GND |
| TxD | 13 | O | UART TX |
| RxD | 14 | I | UART RX |
| GND | 15 | GND | GND |
| +V | 16 | POWER | Unregulated power supply output (5-9 V) |

**Table 2: GPIO interface PIN description**

# 8 PIO SELECT (J3)

This switch toggles PIO2 to PIO7 signal connections between J2 connector and LED/USB/UART interfaces.

**Note:** '*Top'* and '*bottom'* positions refer to viewing WT11 Evaluation Kit from top side as seen in Figure 2.

- Top position must be used when WT11 module is interfaced trough J2 connector.
- Bottom position is used when WT11 module is interfaced trough the DB9 RS232 connector or if USB port or if link state LED is used.

**J3 Switch top position:**

- PIO2 connects to pin 3 on the J2 interface
- PIO3 connects to pin 4 on the J2 interface
- PIO4 connects to pin 5 on the J2 interface
- PIO5 connects to pin 6 on the J2 interface
- PIO6 connects to pin 7 on the J2 interface
- PIO7 connects to pin 8 on the J2 interface

**J3 Switch bottom position:**

- PIO2 connects to USB_IO1
- PIO3 connects to nDTR-UART
- PIO4 connects to nCD-UART
- PIO5 connects to nDSR-MUX
- PIO6 connects to VBUS
- PIO7 connects to blue LED on the board marked with PIO7

# 9 RESET (J4)

The RESET button resets the module using the reset pin on the WT11.

# 10 DSR (J5)

The DSR button is connected to PIO5 pin on the WT11. Thus, when you want to use the DSR signal, please refer to the iWRAP 2.1.0 manual. The use of DSR signal is described under SET CONTROL ESCAPE chapter.

# 11 Speaker JACK (J6)

Connect your generic PC headset's 3,5mm speaker plug here.

# 12 Microphone JACK (J7)

Connect your generic PC headset's 3,5mm headphone plug here.

# 13 SIG Select (J8)

This switch toggles nCTS and RxD signals connection between J2 connector and DB9 RS232 connector.

**Note:** '*Top'* and '*bottom'* positions refer to viewing WT11 Evaluation Kit from top side as seen in Figure 2.

- Top position must be used when external WT11 module's nCTS and RxD pins are interfaced trough J2 connector.
- Bottom position must be used when WT11 is interfaced trough the DB9 RS232 connector.

**J8 Switch top position:**

- nCTS connects to pin 10 on the GPIO (J2) interface
- RxD connects to pin 14 on the GPIO (J2) interface

**J8 Switch bottom position:**

- nCTS connects to nCTS-UART
- RxD connects to RXD-UART

# 14 RS-232 (J9) DTE interface

RS-232 interface PIN configuration is shown in Table 1. The physical interface is D9-male connector (*AMP747840-4*).

| PIN Name: | No.: | I/O: | Description: |
|---|---|---|---|
| NC | 1 | NC | Not connected |
| RxD | 2 | I | RxD |
| TxD | 3 | O | TxD |
| DTR | 4 | O | DTR on |
| GND | 5 | GND | Ground |
| NC | 6 | NC | Not connected |
| RTS | 7 | O | RTS |
| CTS | 8 | I | CTS |
| NC | 9 | NC | Not connected |

**Table 3: RS232 PIN configuration**

# 15 USB (J10) interface

J10 connector is a standard USB B receptacle connector.

# 16 Power supply (J11)

This connector is used with the 5V power supply delivered with the evaluation kit. Diameter 6.0mm, inner pin diameter 2.0mm.

# 17 Power supply (J12)

This connector can be used for external power supply. Power supply must be 5-9V unregulated.

# 18 Contact Information


**Sales:** sales@bluegiga.com

**Technical support:** www.bluegiga.com/support/

**Orders**: orders@bluegiga.com

**WWW:** www.bluegiga.com

**Head Office / Finland:**

Phone: +358-9-4355 060
Fax: +358-9-4355 0660
Sinikalliontie 5A
02630 ESPOO
FINLAND

**Postal address / Finland:**

P.O. BOX 120
02631 ESPOO
FINLAND

**Sales Office / USA:**

Phone: +1 770 291 2181
Fax: +1 770 291 2183
Bluegiga Technologies, Inc.
3235 Satellite Boulevard, Building 400, Suite 300
Duluth, GA, 30096, USA

**Sales Office / Hong-Kong:**

Phone: +852 3182 7321
Fax: +852 3972 5777
Bluegiga Technologies, Inc.
19/F Silver Fortune Plaza, 1 Wellington Street,
Central Hong Kong